DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/25/2008 has been entered.

Response to Arguments

2. Applicant's arguments filed 6/11/2008 have been fully considered but they are not persuasive. The applicant's argument that the examiner has pointed out nothing in either the cited references or their combination that suggests or even hints to a reason that a person of ordinary skill in the art would choose to make a device wherein the widths of the passage increases along the length of the partition wall was not found persuasive. The examiner disagrees with the argument because as stated in the advisory action dated 3/5/2008(see page 2/continuation sheet) the motivation to change and design the width (or other dimension) of the passage within the device depending on the type and size of the sample to be sorted in order to separate/fraction component of the sample based on a selected dimension was disclosed by Austin and the examiner further stated in the advisory action that in view of Austin, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the

Parce device by having the width of the passages increase along the length of the partitioning wall because a person of ordinary skill in the art has good reason to pursue the known option of changing and designing the dimension (width or height) of the passage along the length of the portioning wall as desired depending on the type and size of the sample to be sorted as suggested by Austin in order to separate/fraction the component of the sample based on a selected dimension such as height and/or width as the sample moves along the length of the passage. Furthermore, the reason to combine the two teachings need not necessary come form the references used (see MPEP 2145 X. A).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 8, 9 and 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parce et al. (US Patent 5942443) in view of Austin et al. (US Patent 5837115).

Regarding claim 1, the Parce et al. (US Patent 5942443) reference teaches a device comprising: at least two channels being separated by a partitioning wall therebetween (see Fig. 6A, channels 634 and 604), wherein each channel has an inlet and an outlet (Fig. 6A numbers 650 and 652), and at least three through passages are defined in the partitioning wall separating the at least two channels to allow fluid communication between the two channels (see Fig. 6A, channels 634 and 604 are interconnected by channel 636).

The Parce et al. reference also teaches that at least two passages are defined in each of the at least one partitioning wall (see Parce Fig. 6A).

The Parce et al. reference further teaches that the partitioning wall comprises: two wall sections separated by a gap therebetween; and at least two partitioning elements that divide the gap into the said at least three passages (see Parce Fig. 6A).

The Parce et al. reference further teaches that the partitioning wall comprises at least two partitioning elements that divide the gap into at least three passages (see attached Fig.6A).

The Parce et al. reference does not teach that partitioning elements are unevenly spaced apart to form passages of widths that vary along the length of the partitioning wall and the widths of the passages increases along the length of the partitioning wall.

Austin et al. teaches the sorting apparatus for studying the migration of the cells (see Abstract), wherein the obstacles can have a staggered pattern, or any desired predetermined and reproducible pattern (see column 10 lines 40-45 and lines 59-66). According to Fig.3 number 39, "obstacles" are considered the same as "partitioning elements". Each of the obstacles is separated from an adjacent obstacle by a predetermined separation distance (see column 10 lines 52 and 53) to form passages. These dimensions can be changed and designed to be as desired (see column 10 lines 59-66) to form the passages of a different width inherently including the passages wherein the widths of the passages are increased along the length of the partitioning wall.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Parce et al. by arranging the partitioning elements in any desired predetermined pattern and changing the separation distance

between the obstacles as taught by reference Austin et al. because such modification would allow one to use this device for studying migration of cells of different shapes and sizes.

Regarding claim 2, the Parce et al. and Austin et al. references teach a device according to claim 1 comprising three channels and two partitioning walls, each of which separates two neighboring channels being separated by a partitioning wall therebetween (see the Parce reference, Fig. 6A, channels 634,604 and 606).

Regarding claim 3, the Parce et al. and Austin et al. references teach a device according to claim 1, comprising n channels and n-1 partitioning walls, each of which separates two neighboring channels (see the Parce reference Fig. 6A, channels 634 and 604 and partitioning wall between them).

Regarding claim 4, the Parce et al. and Austin et al. references teach a device according to claim 2, wherein the channels lie in a common place (see the Parce reference column 24, claim 22, and lines 4-6).

Regarding claim 8, the Parce et al. and Austin et al. references teach a device according to claim 1, wherein the partitioning wall comprises m partitioning elements that divide the gap into at least m+l passages (see attached Fig.6A).

Regarding claim 9, the Parce et al. and Austin et al. references teach a device according to claim 1, wherein the partitioning elements are at least substantially evenly spaced apart to form passages of at least substantially equal widths (see attached Fig.6A).

Regarding claim 12, the Parce et al. and Austin et all references teach the claimed invention according to claim 7 wherein the partitioning elements have one of semi-circular, circular, polygonal and an elongated cross section.
Austin et al. teaches that the shapes of the obstacles may vary (see column 14 lines 7-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Parce et al. by fabricating the partitioning elements according to any predetermined shape as taught by Austin et al. because that would allow one to study the migration of the cells of different shapes and sizes.

Regarding claim 13, the Parce et al. and Austin et al. references teach the claimed invention according to claim 12 wherein the elongated cross-section is rounded at least one end thereof.

Austin et al. teaches that the shapes of the obstacles may vary (see column 14 lines 7-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Parce et al. by fabricating an elongated cross-section of rounded shape as taught by reference Austin et al. because that would allow one to study the movement of the specific cells.

Regarding claim 14, the Parce and Austin et al. references teach a device according to claim 2, wherein the thickness of at least one of the partitioning walls is different than that of the other partitioning walls (see the Parce reference, Fig.3, where the thickness of the one of the partitioning wall between channels 304 and 306 is different than the thickness of the other partitioning wall between channels 306 and 308).

Regarding claim 15, the Parce et al. and Austin et al. references teach a device according to claim 14, wherein the thicknesses of the partitioning walls are different from each other (see the Parce reference, Fig.3, where the thickness of the one of the partitioning wall between channels 304 and 306 is different than the thickness of the other partitioning wall between channels 306 and 308).

Regarding claim 16, the Parce et al. and Austin et al references teach a device according to claim 1, wherein the device comprises a substrate whose surface has grooves that define the at least two channels and at least one passage; and a cover that is attached to the surface of the substrate (see the Parce reference, column 9 lines 8 - 15 and column 19 lines 6-14).

Regarding claim 17, the Parce et al. and Austin et al. references teach a device according to claim 16, wherein the substrate is molded using a biocompatible material (see the Parce reference, column 8 lines 13-23).

Regarding claim 18, the Parce et al. and Austin et al. references teach a device according to claim 17, wherein, the biocompatible material is at least substantially translucent.

The Parce reference teaches a transparent material (see column 8 lines 27-36), which is inherently translucent.

Regarding claim 19, the Parce et al. and Austin et al. references teach a device according to claim 16, wherein the cover is of a biocompatible material.

The Parce reference teaches a cover fabricated from the glass (see column 9 lines 11-15), which is considered to be a biocompatible material.

Regarding claim 20, the Parce et al. and Austin et al. references teach a device according to claim 19, wherein the biocompatible material is at least substantially translucent.

The Parce reference teaches a cover fabricated from the glass (see column 9 lines 11-15), which is considered to be to be a translucent material.

Regarding claim 21, the Parce et al. and Austin et al. references teach a device according to claim 17, wherein the biocompatible material comprises one of glass, silicon and a polymerizable material (see the Parce reference, column 8, lines 21-23).

Regarding claim 22, the Parce et al. and Austin et al. references teach a device according to claim 21, wherein the polymerizable material is comprises a material selected from the group consisting of polycarbonate (monomer), polyacrylic (monomer), polyoxymethylene (monomer), polyamide.(monomer), polybutylenterephthalate (monomer) and polyphenylenether (monomer), polydimethylsiloxane (PDMS) (monomer), mylar (monomer), polyurethane (monomer), polyvinylidene fluoride (PVDF) (monomer), flourosilicone (monomer) and combinations and mixtures thereof (see the Parce reference, column 8, lines 36-42).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHANTA G. DOE whose telephone number is (571)270-3152. The examiner can normally be reached on Mon-Fri 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GSD

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